

I. GENERAL

This portion of the project involves the modification of the existing traffic signal at the intersection of MD 648 and the South Entrance to Cromwell Field Shopping Center / M.T.A. Park and Ride in Anne Arundel County Maryland. MD 648 runs in a North-South direction.

II. INTERSECTION OPERATION

The proposed traffic signal will operate in a NEMA six (6) phase, fully traffic actuated mode with northbound and southbound approaches operating concurrently with northbound/southbound exclusive/permissive left turn phases. The eastbound/westbound approaches will operate concurrently with an eastbound clearance phase. There is a light rail pre-emption phase to avoid conflicts on the west leg.

The existing eight phase fully traffic actuated controller will be replaced with a new controller in the southeast quadrant. New wiring will be brought into the cabinet.

III. SPECIAL NOTES

1. It is the responsibility of the contractor to confirm geometrics prior to placing signal equipment.
2. The signal shop will be notified to perform internal wiring of the cabinet at MD 648 @ South Entrance to Cromwell Field Shopping Center/M.T.A. Park and Ride. All cable shall be identified and brought into the controller by the contractor. The contractor shall notify Mr. Edward Rodenhizer, SHA Signal Shop at (410) 787-7650 seventy-two (72) hours in advance of this work.
3. MOT Plates for this project will be as follows: 104.00 to 104.00-12, 104.01-01, 104.02-01, 104.03-01, 104.75
4. Upon completion of this project the contractor shall notify Mr. Robert Snyder of SHA at 410-787-7635 to arrange for the phone line installation. The contractor is to provide Mr. Snyder with the nearest street address, zip code, and phone.

THE FOLLOWING CONTACT PERSONS FOR DISTRICT # 5 ARE AS FOLLOWS:

Mr. Richard L. Daff Sr.
Chief, Traffic Operations Division
(410) 787-7630

Ms. Kimberly Tran
Asst. District Engineer - Traffic
(410) 841-5450

Mr. John Mays
Acting Engineer - Utility
(410) 841-5450

Mr. Greg Welker
District Engineer
(410) 841-5450

Mr. Charles Georges
Asst. District Engineer - Maintenance
(410) 841-5450

The Power Company Representative Is:

Mr. Dale Fishback
Baltimore Gas & Electric Company
(410) 291-3670

B. EQUIPMENT TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR:

CATEGORY CODE NO.	SPEC. NO.	QUANTITY	DESCRIPTION
120500	104	1 S.	MAINTENANCE OF TRAFFIC
120662	104.II	500 L.F.	REMOVAL OF EXISTING PAVEMENT LINE MARKINGS - ANY WIDTH
203030	205	2 C.Y.	TEST PIT EXCAVATION
801004	801	12 C.Y.	FURNISH AND INSTALL CONCRETE FOR SIGNAL FOUNDATION
802501	810	560 360 L.F.	FURNISH AND INSTALL STRANDARD BARE COPPER GROUND WIRE (NO. 6 AWG)
805160	805	40 L.F.	FURNISH AND INSTALL 1 IN. LIQUID TIGHT FLEXIBLE NON-METALLIC CONDUIT FOR DETECT
811001	811	4 EA.	FURNISH AND INSTALL ELECTRICAL HANDHOLE
813006	813	20 S.F.	RELOCATE SIGNS FROM EXISTING OVERHEAD STRUCTURES
813015	813	36 S.F.	INSTALL OVERHEAD SIGN
818004	810	1 EA.	FURNISH AND INSTALL 10 FT. BREAKAWAY PEDESTAL POLE
818041	818	2 EA.	FURNISH AND INSTALL [27 FT] STEEL MAST ARM POLE W/60 FT MAST ARM
831010	806	2 EA.	FURNISH AND INSTALL 250 WATT HIGH PRESSURE SODIUM LAMP AND LUMINAIRE
837001	804	4 EA.	FURNISH AND INSTALL GROUND ROD $\frac{3}{4}$ IN. DIA. X 10 FT. LENGTH
860272	814	38 EA.	FURNISH AND INSTALL 12 IN. VEHICULAR TRAFFIC SIGNAL HEAD SECTION (BLACK FACED)
860278	814	2 EA.	FURNISH AND INSTALL 12 IN. PEDESTRAIN SIGNAL HEAD SECTION POLE MOUNT
861104	810	1620 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 2 CONDUCTOR (AL SHIELDED)
861105	810	380 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG)
861106	810	755 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 3 CONDUCTOR (NO. 14 AWG)
861107	810	320 805 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)
861108	810	1680 420 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 AWG)
861116	810	410 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 2 CONDUCTOR (NO. 12 AWG)
862101	810	1340 L.F.	FURNISH AND INSTALL LOOP WIRE ENCASED IN FLEXIBLE TUBING (NO. 14 AWG)
862102	810	530 L.F.	FURNISH AND INSTALL SAWCUT FOR SIGNAL (LOOP DETECTOR)
865201	817	2 1 EA.	FURNISH AND INSTALL PUSHBUTTON AND SIGN
866101	818	2 EA.	FURNISH AND INSTALL 10 FOOT LIGHTING ARM ON SIGNAL STRUCTURE
870160	805	60 L.F.	FURNISH AND INSTALL 2 IN. DIA. PVC ELECTRICAL CONDUIT SCHEDULE 80 - TRENCHED
870163	805	150 L.F.	FURNISH AND INSTALL 3 IN. DIA. PVC ELECTRICAL CONDUIT SCHEDULE 80 - TRENCHED
870164	805	40 L.F.	FURNISH AND INSTALL 3 IN. DIA. PVC ELECTRICAL CONDUIT SCHEDULE 80 - BORED
870165	805	45 L.F.	FURNISH AND INSTALL 3 IN. DIA. PVC ELECTRICAL CONDUIT SCHEDULE 80 - SLOTTED
870166	805	10 L.F.	FURNISH AND INSTALL 4 IN. DIA. PVC ELECTRICAL CONDUIT SCHEDULE 80 - TRENCHED
870167	805	85 L.F.	FURNISH AND INSTALL 4 IN. DIA. PVC ELECTRICAL CONDUIT SCHEDULE 80 - BORED
870168	805	100 L.F.	FURNISH AND INSTALL 4 IN. DIA. PVC ELECTRICAL CONDUIT SCHEDULE 80 - SLOTTED
873001		L.S.	REMOVE AND SALVAGE EXISTING EQUIPMENT

* CATEGORY CODE NUMBERS ARE PROVIDED FOR SHA REFERENCE ONLY AND DO NOT RELATE TO ACTUAL BID ITEMS.

EQUIPMENT LIST

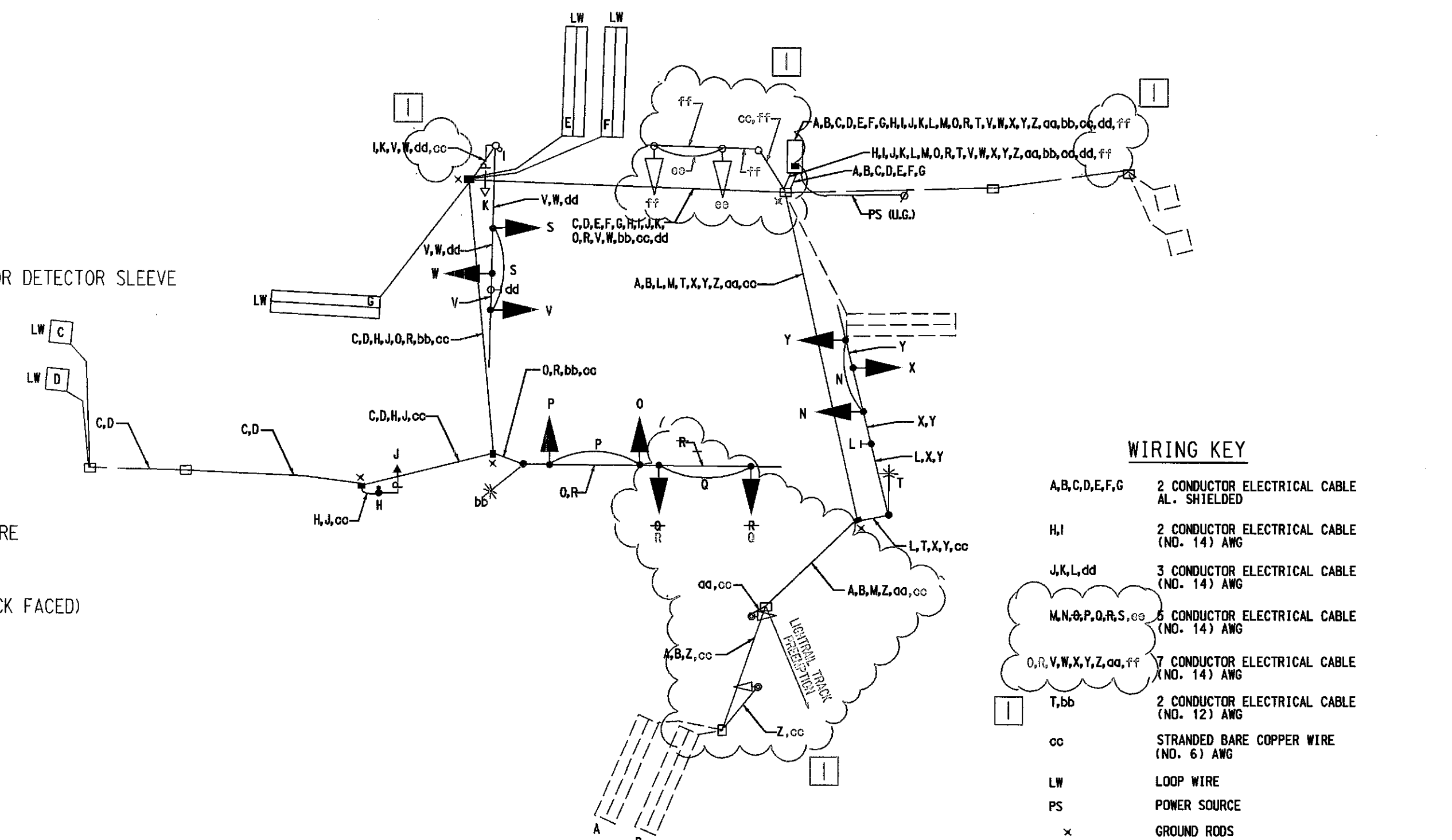
A. EQUIPMENT TO BE SUPPLIED BY SHA AND INSTALLED BY THE CONTRACTOR:

* CATEGORY CODE NO.	SPEC. *	QUANTITY	DESCRIPTION
971017	816	1 EA.	FURNISH EIGHT-PHASE (FULLY ACTUATED) CONTROLLER AND CABINET - BASE MOUNT
963010	816	2 EA.	FURNISH 4-CHANNEL LOOP DETECTOR AMPLIFIER, RACK MOUNT
973023	813	36 S.F.	SHEET ALUMINUM SIGNS:
		- 1 EA	R3-5R SIGN 30"x36" LANE USE - RIGHT TURN ONLY
		- 1 EA	R3-5L SIGN 30"x36" LANE USE - LEFT TURN ONLY
		- 2 EA	R10-12 SIGN 36"x42" "LEFT TURN YIELD ON GREEN (BALL)"

C. EQUIPMENT TO BE RETURNED TO SHA BY THE CONTRACTOR:

SHA FORCES SHALL REMOVE THE CONTROLLER AND ALL AUXILLIARY EQUIPMENT FROM THE CONTROLLER CABINET. THE CABINET AND ALL OTHER MATERIALS TO BE REMOVED BY THE CONTRACTOR SHALL BECOME THE PROPERTY OF THE CONTRACTOR.

WIRING DIAGRAM



PHASE CHART

PHASE 1 & 5	\overline{G}_R	\overline{G}_R	R	\overline{G}_R	\overline{G}_R	R	R	R	R	R	R	R	R	R	R	DONT WALK	DONT WALK	DARK	DARK	
PHASE 1 & 5 CHANGE TO PHASE 1 & 6 OR PHASE 2 & 5																				
PHASE 1 & 6	\overline{G}_G	\overline{G}_G	G	R	R	R	R	R	R	R	R	R	R	R	R	DONT WALK	DONT WALK	DARK	DARK	
PHASE 1 & 6 CHANGE	\overline{Y}_G	\overline{Y}_G	G	R	R	R	R	R	R	R	R	R	R	R	R	DONT WALK	DONT WALK	DARK	DARK	
PHASE 2 & 5	R	R	R	\overline{G}_G	\overline{G}_G	G	R	R	R	R	R	R	R	R	R	DONT WALK	DONT WALK	DARK	DARK	
PHASE 2 & 5 CHANGE	R	R	R	\overline{Y}_G	\overline{Y}_G	G	R	R	R	R	R	R	R	R	R	DONT WALK	DONT WALK	DARK	DARK	
PHASE 2 & 6	G	G	G	G	G	G	R	R	R	R	R	R	R	R	R	DONT WALK	DONT WALK	DARK	DARK	
PHASE 2 & 6 CHANGE	Y	Y	Y	Y	Y	Y	Y	R	R	R	R	R	R	R	R	DONT WALK	DONT WALK	DARK	DARK	
PHASE 4 & 8	R	R	R	R	R	R	G	G	G	G	G	G	G	G	G	DONT WALK	DONT WALK	DARK	DARK	
PHASE 4 & 8 CHANGE	R	R	R	R	R	R	Y	Y	G	G	Y	Y	Y	Y	Y	DONT WALK	DONT WALK	DARK	DARK	
PHASE 4 CLEARANCE	R	R	R	R	R	R	R	R	G	G	R	R	R	R	R	DONT WALK	DONT WALK	DARK	DARK	
PHASE 4 CLEARANCE CHANGE	R	R	R	R	R	R	R	R	Y	Y	R	R	R	R	R	DONT WALK	DONT WALK	DARK	DARK	
PHASE 4 & 8 ALT.	R	R	R	R	R	R	G	G	G	G	G	G	G	G	G	WALK	WALK	DARK	DARK	
PED CLEAR	R	R	R	R	R	R	G	G	G	G	G	G	G	G	G	FLSH DT WALK	FLSH DT WALK	DARK	DARK	
PHASE 4 & 8 VALTY CHANGE	R	R	R	R	R	R	Y	Y	G	G	Y	Y	Y	Y	Y	DONT WALK	DONT WALK	DARK	DARK	
LIGHTRAIL HOLD	G	G	G	G	G	G	R	R	R	R	R	R	R	R	R	DONT WALK	DONT WALK			
LIGHTRAIL HOLD CHANGE	Y	Y	Y	Y	Y	Y	R	R	R	R	R	R	R	R	R	DONT WALK	DONT WALK			
FLASHING OPERATION	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R	DARK	DARK	DARK	DARK	

